

CLAIMS

1. An iontophoresis device structure comprising an electrode for an iontophoresis, a member for detection constituted so as to adsorb a physiological substance by the iontophoresis, and a conductive layer arranged between said electrode and said member for detection.

2. The iontophoresis device structure according to claim 1, said member for detection is composed of a porous membrane.

3. The iontophoresis device structure according to claim 1 or 2, adsorbability of protein to said member for detection is 20 $\mu$ g per cm<sup>2</sup> or more.

4. The iontophoresis device structure according to any of claims 1-3, thickness of said member for detection is 5-200 $\mu$ m.

5. The iontophoresis device structure according to any of claims 1-4, said member for detection is constituted so as to adsorb at least one of living tissues, blood and cells.

6. The iontophoresis device structure according to any of claims 1-4, said member for detection is constituted so as to adsorb a substance secreted from at least one of living tissues, blood and cells.

7. The iontophoresis device structure according to claim 6, said secreted substance is a peptide or a protein.

8. The iontophoresis device structure according to any of claims 1-4, said member for detection is constituted so as to adsorb a tumor-related antigen, a tumor marker or other tumor-related substance.

9. The iontophoresis device structure according to claim 8, said tumor-related antigen, tumor marker or other tumor-related substance is selected from groups composed of melanoma cells, melanoma marker (NKI/C3), melanoma marker (PAL/M1), melanoma markers (S-100  $\alpha$  and  $\beta$ ), carcinoembryonic antigen (CEA), neuroblastoma (CE 7), neuroblastoma (AD2), malignin,  $\alpha$ -fetoprotein (AFP), pepsinogen, basic fetoprotein (BFP), pancreas carcinoembryonic antigen (POA), embryonic prealbumin (EPA), carbohydrate antigen (CA19-9), pancreatic cancer-related antigen (CA50), cancer antigen (CSLEX-1), pancreatic cancer-related antigen (sialylSSEA-1), pancreatic cancer-related antigen (Dupan-2), cancer antigen (NCC-ST-439), carbohydrate antigen (sialylTn), cancer antigen (CA72-4), cancer antigen (KMO-1), pancreatic cancer-related antigen (SPan-1), carbohydrate antigen (CA125), cancer antigen (CA15-3), planocellular carcinoma (SCC), seminoprotein ( $\gamma$ -Sm), prostatic specific antigen (PA), ferritin, tissue polypeptide antigen (TPA), tumor-related antigen (CYFRA-21-1), acidic immunoprotein (IAP), immunosuppressive acidic protein, prostatic acidic protein (PAP), neuron specific enolase (NSE), chorionic gonadotropin (hCG), enzyme, amino acid, mucosa containing mucopolysaccharide, dopa, dopamine and hormones.
10. An applicator for an iontophoresis comprising a backing having a concave, an electrode arranged in the bottom of said backing concave, a member for detection of a physiological substance arranged in the top of said backing concave, and a conductive layer arranged between said electrode and said member

for detection of a physiological substance.

11.(amended) The applicator for the iontophoresis according to claim 10, further comprising an adhesive sheet having a opening in a part corresponding to said member for detection of a  
5 physiological substance.

12.(amended) A method for detecting physiological substances including the step of detecting a physiological substance adsorbed onto a member for detection using an iontophoresis by an immunological or chemical method.

10 13. The method for detecting physiological substances according to claim 12, said detection is performed by staining or measuring of said physiological substance.

14. An iontophoresis system comprising: an iontophoresis device including a member for detection which is constituted  
15 so as to adsorb a physiological substance by an iontophoresis, an electrode for a device, and a conductive layer arranged between the electrode for the device and the member for detection; a reference device including a reference electrode corresponding to the electrode for the device; and a power source connecting  
20 electrically between the electrode for the device and the reference electrode.

15. The iontophoresis system according to claim 14, said member for detection has a porous structure having an average pore size of 0.001-20 $\mu$ m.